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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,675	02/23/2007	Frederik Gorges	BKS.001.WUS	2319
76385	7590	09/22/2009	EXAMINER	
Hollingsworth & Funk 8500 Normandale Lake Blvd., Suite 320 Minneapolis, MN 55437			BLAIR, KILE O	
			ART UNIT	PAPER NUMBER
			2614	
			MAIL DATE	DELIVERY MODE
			09/22/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/560,675	<b>Applicant(s)</b> GORGES ET AL.	
	<b>Examiner</b> Kile Blair	<b>Art Unit</b> 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office action is in response to the communication filed on 6/23/09. Claims 1-8 and 11-16 are pending. Claims 9 and 10 are canceled.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites that a speed is performed which makes the claim unclear. The claim may be amended to recite "Method according to claim 1, wherein said long term controlling of the power of the signal is performed **at a speed** depending from the difference power between said detected input signal and said maximum power level for long time operation" in order to overcome the rejection.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 11-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Bonneville (US 5729611).

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Regarding claim 1, Bonneville teaches a method for operating a dynamic range control of an audio signal (providing first and second gain control signals, col. 2, lines 31-34), with an adaptive threshold (two different predetermined levels, col. 2, lines 31-34), wherein said dynamic range control comprises an audio signal input (audio input, fig. 1), an audio signal output (electroacoustic transducer unit 10, fig. 1, col. 3, lines 16-19) and a power control comprising: receiving at least two thresholds comprising a maximum power level for short time interval operation and a maximum power level for long time operation of an electro acoustic transducer (first and second levels, col. 2, lines 30-48), detecting the power of the audio signal input continuously (motion sensor 28 monitors loudspeaker cone movement which is caused by input signal, col. 3, lines 29-32), short term controlling the power of the audio signal output wherein the power of the output is reduced to said maximum power level for short time operation, if the detected power of said audio signal input exceeds said maximum power level for short time interval operation (when the high threshold TH2 is exceeded, the second control signal C2 increases rapidly thereby reduces the gain of the amplifier very rapidly so that  $V_{amp}$  {the amplifier output power} falls to about  $V_{TH2}$  after an interval corresponding to T2a, col. 4, lines 50-63), and long term controlling the power of the audio signal output wherein the power of the output signal is reduced to said maximum power level for long time operation, if the detected power of said audio signal input is exceeding said maximum power level for long time operation (when the lower threshold TH1 is exceeded, the first control signal C1 increases slowly decreasing the gain of the VCA 22 {col. 4, lines 45-50} until  $V_{amp}$  falls to about  $V_{TH1}$ , col. 5, lines 7-14), for a predetermined

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time period (T1r, col. 4, lines 29-34 and col. 5, lines 19-27), wherein said long term control overrides said short term control (while overload conditions persist, the output signal  $V_{amp}$  from power amplifier 16 is controlled by VCA 22 which holds  $V_{amp}$  to  $V_{TH1}$ , col. 5, lines 7-19; i.e. only after charging circuit 50 has discharged will VCA 24 again be allowed to hold  $V_{amp}$  to  $V_{TH2}$  without VCA 22 superseding it by holding  $V_{amp}$  to the lower threshold  $V_{TH1}$ , col. 5, lines 15-27).

Regarding claim 2, Bonneville teaches a method according to claim 1, wherein a speed of said long term controlling of the power of the signal is performed depending from the difference power between said detected input signal and said maximum power level for long time operation (difference between the proportional signal and the first threshold, col. 2, lines 49-57).

Regarding claim 3, Bonneville teaches a method according to claim 1, wherein said thresholds are received from said electro acoustic transducer (the thresholds are based on where the power amplifier out from the speakers will start clipping, col. 4, lines 8-14).

Regarding claim 4, Bonneville teaches a method according to claim 1, wherein said long term control comprises a smooth reduction of said output power level (when the lower threshold  $V_{TH1}$  is exceeded, the first control signal reduces the gain of the amplifier at a relatively slow rate, abstract).

Regarding claim 5, Bonneville teaches a method according to claim 1, wherein said long term control comprises a time interval controlled smooth reduction of said output power level (when the lower threshold is exceeded, the first control signal

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reduces the gain of the amplifier at a relatively slow rate based on the discharge constant T1r, abstract, col. 4, lines 28-33).

Regarding claim 6, Bonneville teaches a method according to claim 1, wherein said short term control comprises an immediate reduction of said output power level (when the high threshold is exceeded, the second control signal reduces the gain of the amplifier very rapidly, abstract).

Regarding claim 7, Bonneville teaches a method according to claim 1, wherein said power control comprises a digital power control having a digital control range and an analog power control having an analog power control range, wherein said signal volume is controlled analogously at signal levels lower than the control range of said analog control, and said signal power is controlled digitally at signal levels higher than the control range of said digital control, and wherein the power control ranges of said analog and digital controls are not overlapping (the threshold components can be operated digitally and the main signal path can be operated analogously, col. 5, lines 51-57).

Regarding claim 11, Bonneville teaches a dynamic range controller with an adaptive threshold (two different predetermined levels, col. 2, lines 31-34) comprising: an audio signal input (audio input, fig. 1), an audio signal output (electroacoustic transducer unit 10, fig. 1, col. 3, lines 16-19), means to continuously detect the power of the audio signal and a power controller (motion sensor 28 monitors loudspeaker cone movement which is caused by input signal, col. 3, lines 29-32), wherein said dynamic range controller comprises: means to receive at least two thresholds comprising a

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maximum power level for short time interval operation (when the high threshold is exceeded, abstract) and a maximum power level for long time operation of an electro acoustic transducer operation (when the lower threshold is exceeded, the first control signal reduces the gain of the amplifier at a relatively slow rate, abstract), wherein said dynamic range controller is configured to short term control the power of the audio signal output wherein the power of the output is reduced to said maximum power level for short time operation, if the detected power of said audio signal input exceeds said maximum power level for short time interval operation (when the high threshold TH2 is exceeded, the second control signal C2 increases rapidly thereby reduces the gain of the amplifier very rapidly so that  $V_{amp}$  {the amplifier output power} falls to about  $V_{TH2}$  after an interval corresponding to T2a, col. 4, lines 50-63), and wherein said dynamic range controller is configured to long term control the power of the audio signal output wherein the power of the output signal is reduced to said maximum power level for long time operation, if the detected power of said audio signal input is exceeding said maximum power level for long time operation (when the lower threshold TH1 is exceeded, the first control signal C1 increases slowly decreasing the gain of the VCA 22 {col. 4, lines 45-50} until  $V_{amp}$  falls to about  $V_{TH1}$ , col. 5, lines 7-14) for a predetermined time period (T1r, col. 4, lines 29-34 and col. 5, lines 19-27), wherein said long term control overrides said short term control (while overload conditions persist, the output signal  $V_{amp}$  from power amplifier 16 is controlled by VCA 22 which holds  $V_{amp}$  to  $V_{TH1}$ , col. 5, lines 7-19; i.e. only after charging circuit 50 has discharged will VCA 24 again be

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allowed to hold  $V_{amp}$  to  $V_{TH2}$  without VCA 22 superseding it by holding  $V_{amp}$  to the lower threshold  $V_{TH1}$ , col. 5, lines 15-27).

Regarding claim 12, Bonneville teaches a dynamic range control according to claim 11, further comprising a soft switch to slowly control the power of the signal wherein the power of the output signal substantially equals said maximum power level (the  $V_{amp}$  output signal remains stable at  $V_{TH1}$ , col. 5, lines 12-19)

Regarding claim 13, Bonneville teaches a dynamic range control according to claim 11, further comprising a timer element to operate said long term control in a timer controlled way (charging circuit 50 with attack time T1a, col. 4, lines 21-28).

Claim 14 is substantially similar to claim 11 and is rejected for the same reasons.

Regarding claim 15, Bonneville teaches an electronic audio device according to claim 14, wherein said audio source is a digital audio signal source (when the audio signal itself is digital, col. 5, lines 58-64) and said audio output is an analog audio output (D/A converter before power amplifier 16 to make output analog, col. 5, lines 58-64).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bonneville.



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Regarding claim 8, although Bonneville does not disclose the invention as a computer program or instructions, it would have been obvious to one of ordinary skill in the art that the circuit could be modeled as a computer program and implemented as an audio device with the motivation of being able to selectively program a computer instead of hardwiring a circuit.

Regarding claim 16, Bonneville teaches an electronic audio device according to claim 14. Although Bonneville does not explicitly disclose the feature wherein the means to receive at least two thresholds comprised in the dynamic range control with an adaptive threshold is implemented by an integrated circuit implemented in a connector of said electro acoustic transducer, it would have been obvious to one of ordinary skill in the art to use an integrated circuit to determine where the amplifier and speakers will start clipping (point at which amplifier and speakers will start clipping, col. 4, lines 8-14) with the motivation of saving physical space on a circuit board.

### ***Response to Arguments***

Applicant's arguments filed 6/23/09 have been fully considered but they are not persuasive.

Applicant argues that Bonneville does not teach reducing the power of the audio signal output to at least one of the received thresholds, however the examiner asserts that figure 2 of Bonneville shows  $V_{amp}$  reduced to  $V_{TH1}$  at time F as disclosed in col. 5, lines 10-14.

Applicant argues that Bonneville does not teach the feature of long term control overriding short term control, however the examiner asserts that Bonneville teaches that while overload conditions persist, the output signal  $V_{amp}$  from power amplifier 16 is controlled by VCA 22 which holds  $V_{amp}$  to  $V_{TH1}$  (col. 5, lines 7-19).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kile Blair whose telephone number is (571) 270-3544. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KB

/Vivian Chin/  
Supervisory Patent Examiner, Art Unit 2614